REMARKS/ARGUMENTS

Claims 16 to 30 are active in the application. Reconsideration is respectfully requested.

The present invention relates to aqueous dispersions comprised of water-soluble and/or water-swellable cationic copolymers.

Claim Rejection, 35 USC 103

Claims 16, 18-20, 24 and 26 stand rejected based on 35 USC 103 as obvious over Mallon et al '839 in view of Jachowicz et al '752. This ground of rejection is respectfully traversed.

As applicants have stated on the record previously, the important distinguishing feature of the present process is that in the preparation of a water-soluble or water-swellable cationic polymer, a monomer mixture of a cationic monomer (a), a water-soluble monomer (b), and optionally a bi- or polyfunctional, free radically copolymerizable monomer (c) is performed in the presence of an ***amphoteric*** polymer dispersant which has an overall negative charge and in the presence of 1 to 100 % of an amount of salt which is necessary to saturate the reaction medium with the salt. An important requirement of the claimed process is that the amounts of the necessary monomer (a) and (b) components and optional monomer (c) component are adjusted so that the resulting polymer has an overall positive charge. The polymer prepared is quaternized if the monomer (a) that is employed is a non-quaternized monomer. The resulting water-soluble or water-swellable cationic polymer exhibits improved stability and viscosity characteristics.

The importance of the presence of an *amphoteric* polymer dispersant in the present process of preparing a polymer dispersant product versus processes which employ different dispersants, as well as non-amphoteric polymer dispersants, is demonstrated by the data

presented in the table of page 24 of the specification. It must be noted that while Mallon et al discloses the use of polymeric dispersants in the preparation of the polymer dispersion of the patent, any dispersant selected from cationic dispersants, non-ionic dispersants and anionic dispersants may be employed as described in column 21 of the patent. There is no disclosure of the use of an *amphoteric* polymer dispersant in the patent. Referring to the data in the table on page 24, Comparative Examples 1-6 show the results obtained with respect to polymer dispersants obtained by the use of polymer dispersants that have only anionic or cationic charges. Thus, the comparative examples are consistent with the teachings of the Mallon et al patent of the acceptability of the selection of a cationic or anionic dispersant. Comparative Example 7 is a step closer to the present process because it discloses the use of an amphoteric dispersant in a polymerization step. However, the dispersant is of the type which has an overall positive charge, not a negative charge as required in the present process. Examples 3-10 show embodiments of the present invention because the polymer dispersants employed in the polymerization reactions described are amphoteric and each having an overall negative charge as required by the present claims. The results presented in the table (reproduced in part below) show the superior viscosity and stability of the dispersion embodiments of the invention versus the dispersions prepared from the dispersants used in the comparative examples. These results clearly distinguish the invention as claimed over the cited Mallon et al patent.

Example	Crosslinker	Viscosity Emulsion (mPas)[5]	Stability duration
C1	-	800	< 1 day
C2	-	850	< 1 day
C3	-	100	< 1 day
C4	PETEA	100	< 1 day
C5	TAA	<100	< 1 day
C6	TAA	100	< 1 day
C7	TAA	1500	< 1 day
3	-	3500	< 2 months
4	-	1650	< 2 months

5	-	100	< 2 months
6	PETEA	1250	< 2 months
7	TAA	1100	< 2 months
8	-	2900	< 1 month
9	-	7000	< 1 month
10	-	6000	< 1 month

Applicants again emphasize that Mallon et al describes the utilization of polymeric dispersants to stabilize the dispersions of cationic polymers (see col 5, line 5 to col 6, line 25). The polymeric dispersants disclosed in the patent are nonionic, anionic and cationic polymers that are used to stabilize the cationic polymer of the dispersion. On the other hand, the present invention differs significantly from Mallon et al in that a free-radical copolymerization of reacting components (a) (a cationic monomer), (b) (a water-soluble monomer), and (c) (optionally a bi- or polyfunctional, free radically copolymerizable monomer) occurs in the presence of an amphoteric dispersant which has an overall negative charge. No such amphoteric dispersant is disclosed by Mallon et al.

Applicants maintain that the assessment of the relevancy of the Jachowicz et al patent to the present invention is inaccurate. Jachowicz et al, although disclosing the use of an amphoteric surfactant as a possible surfactant, in the formulation of a composition for the cleaning and conditioning of the hair, is irrelevant to the present invention. As claimed, the present invention provides a water-soluble or water-swellable cationic product by free radically polymerizing a cationic monomer or quaternizable monomer and a water-soluble monomer and, optionally, a di- or polyfunctional, free radically copolymerizable monomer in an aqueous medium in the presence of a salt in an amount which is necessary to saturate the reaction medium with salt and 0.1 to 20 % by wt of an amphoteric dispersant that has an overall negative charge. Jachowicz et al does not describe such a reaction at all. Rather, the patent teaches the preparation of cationic polymers by the non-aqueous polymerization reactions described in Examples 1 and 2, in which THF is used as the solvent. The polymer

obtained in each reaction is isolated and then, as described in Example 4, the cationic polymers are formulated in multi-component hair treatment formulation as set forth in Compositions 1-7. An anionic amphoteric surfactant or an amphoteric surfactant is used as a formulation component. It is abundantly clear that the patent in no way teaches or is relevant to the present process as claimed.

Applicants also submit that Jachowicz et al does not lead the skilled artisan to prepare a final product formulation of the type of the present invention because of clear statements in the text which state that the composition should contain only one type of polymeric ingredient that has a polar character. Thus, the disclosure of column 2, lines 41-47 states that:

> The formulations of the invention preferably contain only one type of polymeric ingredient having polar character, i.e., the novel cationic polymer. The absence of other polymer molecules in the formulations appears to enhance their performance and stability characteristics, as well as such physical properties as foaminess and thickness. --

Another contrary teaching is found at column 9, lines 31-38 of the patent where it is stated that:

> It is preferred that the cationic polymers of the invention be the only polymeric electrolytic species in the final formulation. Thus, if surfactants or other agents of polar or ionic character are included, they are preferably not polymeric in nature. If however, the use of a polymeric additive is mandated, its concentration should be kept to a minimum, i.e., less than 5 wt % of the total formulation.

Still another contrary teaching is found at column 9, lines 31-38 of the patent where it is stated that:

> As was stated in discussing anionics, it is preferred that any amphoteric surfactants used be non-polymeric.

With regard to the issue of the presence of other polar polymeric species in the composition embodiments disclosed in Jachowicz et al, the Examiner contends by his statement at the bottom of page 4 of the Office Action concerning the use of non-polymeric dispersants is only an expressed "preference" and therefore is not in any way prohibitive on the use of other polar polymeric species. Applicants contend, on the other hand, that the three

citations set forth above from the Jachowicz et al patent clearly would be a discouragement to one of skill in the art from using other polar polymeric species in the composition of the present invention. Applicants maintain that the patent strongly persuades one of skill from using additional polymeric components.

Other commentary which is consistent with applicants' position as stated above can be found in the MPEP. Of noteworthy significance is the decision of In re Hedges (228 USPQ 685) which concludes that proceeding contrary to accepted wisdom in the art is evidence of unobviousness. In the case of the present invention, it is clear from the cited portions of the Jachowicz et al patent that the patent significantly dissuades one of skill in the art from preparing a formulation which contains additional polar polymeric species in addition to the cationic polymer disclosed

Other noteworthy commentary can be found in the decision of In re Fulton (228 USPQ2d 1141) which contains the conclusion that the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit or otherwise discourage the solution claimed. Applicants maintain that this statement is supportive of their arguments advanced against the Jachowicz et al patent, because in this case, the disclosure of the Jachowicz et al patent is discredited or can be criticized because it leads the skilled artisan away from including any additional polar polymeric species in the formulation disclosed.

Accordingly, the rejection of the claims is believed overcome and withdrawal of the rejection is respectfully requested.

Claim 17 stands rejected based on 35 USC 103 as obvious over Mallon et al '839 in view of Jachowicz et al '752 and further in view of Lenney et al, U.S. Patent 5,470,903. This ground of rejection is respectfully traversed.

Claim 17 is directed a secondary, but preferred aspect of the invention of a specific type of amphoteric dispersant. However, it is not a feature upon which patentability depends. The citation of the Lenney et al patent does not overcome the deficiencies of the other cited patents which, as seen above, do not lead the skilled artisan to the present process as claimed with respect to its specific charge requirements that must be maintained. Accordingly, the patents in combination do not suggest and withdrawal of the rejection is respectfully requested.

Claims 21-23, 25, 27 and 30 stand rejected based on 35 USC 103 as obvious over Mallon et al '839 in view of Jachowicz et al '752 and further in view of Huang et al, '6207. This ground of rejection is respectfully traversed.

As is clear from the discussion above, the primary references that have been cited as suggesting the present invention do not suggest the invention as claimed. Huang et al does not overcome the deficiencies of Mallon et al in view of Jachowicz et al. Huang et al discloses a two polymer composition that is comprised of (a) a first cationic water-soluble or water-swellable polymer comprised of cationic recurring units and anionic recurring units and (b) at least one second water-soluble polymer which is different from the first copolymer. On its face it is clear that Huang et al is not relevant to the present invention where a combination of a cationic monomer or quaternizable monomer and a water-soluble monomer is polymerized, under the requirement that the amounts of the at least two monomers are adjusted so as to provide a polymer that has an overall positive charge, in an aqueous medium that contains a salt and an amphoteric dispersant that has an overall negative charge. Moreover, it is not seen how the aqueous polymer dispersion of the patent is relevant to either of the Mallon et al or Jachowicz et al patent, neither of which, as demonstrated above, suggests the present process of polymerizing the specified combination of monomers in the presence of a polymer dispersant where the polymer obtained is of one charge type and the

dispersant is of the opposite charge type. Certainly, the references do not at all suggest the aspects of the invention of using the present polymer dispersion for dewatering and clarifying water, as well as for the production of oil, the processing of minerals and in biotechnological applications. Accordingly, withdrawal of the outstanding ground of rejection is requested.

Claims 28 and 29 stand rejected based on 35 USC 103 as obvious over Mallon et al '839 in view of Jachowicz et al '752 and further in view of Bhattacharya. This ground of rejection is respectfully traversed.

As pointed out above, the primary references do not suggest either the present process of preparing an aqueous dispersion of a cationically charged polymer prepared by the polymerization of the appropriate monomers in the presence of an amphoteric dispersant of overall negative charge, nor the dispersion itself. Further, Bhattacharya does not improve upon this deficiency, because the reference only discloses personal care preparations which contain a cross-linked cationic vinyl addition polymer. No mention is made of the present cationically charged polymer dispersion and the specific method by which it is prepared. Accordingly, Claims 28 and 29 are unobvious over the cited references and withdrawal of the rejection is respectfully requested.

It is believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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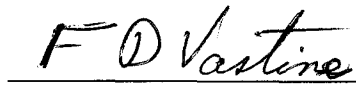

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